

APPENDICES

Appendix 1

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Appendix 2

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Appendix 3

COUNTY OF LOS ANGELES - DEPARTMENT OF HEALTH SERVICES
FETAL-INFANT MORTALITY REVIEW

MORTALITY CONTRIBUTORS FORM:

Case # 199

(0) No (1) Probably (2) Definitely (3) Insufficient Information (4) Not Applicable

1. COMMUNITY FACTORS

- a. Services unavailable _____
- b. Services inaccessible _____
- c. Inadequate community subsidy of care _____
- d. Lack of transportation _____
- e. Lack of child care _____
- f. Other (Specify: _____)

2. PATIENT AND/OR PARENT FACTORS

- a. Delay or failure to seek care _____
- b. Noncompliance _____
- c. Lack of knowledge regarding importance of an event _____
- d. Lack of knowledge of treatment or follow-up _____
- e. Environmental hazards _____
- f. Inadequate parental supervision _____
- g. Other (Specify: _____)

3. HEALTHCARE FACILITY FACTORS

- a. Inadequately trained personnel _____
- b. Inadequate or unavailable equipment _____
- c. Policies contribute to delay or inadequate treatment _____
- d. Inadequate or unavailable facilities _____
- e. Poor communications _____
- f. Lack of continuity of care _____
- g. Unavailable or inadequate response by EMT _____
- h. Other (Specify: _____)

4. HEALTH CARE PROFESSIONAL FACTORS

- a. Delay in or lack of diagnosis, treatment, or follow-up _____
- b. Use of ineffective treatment _____
- c. Misdiagnosis _____
- d. Failure to refer or seek consultation _____
- e. Lack of continuity of care _____
- f. Other (Specify: _____)

5. CLASSIFICATION

Chance To Alter Outcome: (1) None (2) Some (3) Good (4) Strong _____

6. PREGNANCY RELATED. YES / NO

7. RECOMMENDATIONS FOR SYSTEM CHANGE

Appendix 4

TABLES

Table 1. Maternal Death Autopsies - Los Angeles County 1994-96

| | |
|----------|-------|
| Hospital | 23.8% |
| Coroner | 54% |
| None | 22.2% |

Table 2. Race of Maternal Deaths & Live Births- Los Angeles County 1994-96

| Race | Maternal Deaths # | Maternal Deaths % | Live Births # | Live Births % |
|----------|-------------------|-------------------|---------------|---------------|
| White | 7 | 11.1% | 103,909 | 19.82% |
| Black | 15 | 23.8% | 48,614 | 9.27% |
| Asian/PI | 8 | 12.7% | 48,204 | 9.20% |
| Hispanic | 33 | 52.4% | 321,645 | 61.36% |
| Others | 0 | 0% | 1,857 | 0.35% |
| Total | 63 | 100% | 524,229 | 100% |

Table 3. Age Group of Maternal Deaths - Los Angeles County 1994-96

| Age Group | # | % |
|-----------|----|-------|
| 0-19 | 5 | 7.9% |
| 20-24 | 10 | 15.8% |
| 25-29 | 11 | 17.5% |
| 30-34 | 19 | 30.2% |
| 35-39 | 11 | 17.5% |
| 40+ | 7 | 11.1% |
| Total | 63 | 100% |

Table 4. Maternal Age Group of Live Births - Los Angeles County 1994-96

| Age Group | # | % |
|-----------|---------|-------|
| 0-19 | 65,344 | 12.5% |
| 20-24 | 129,870 | 24.8% |
| 25-29 | 143,006 | 27.3% |
| 30-34 | 116,183 | 22.2% |
| 35-39 | 56,735 | 10.7% |
| 40+ | 13,091 | 2.5% |
| Total | 524,229 | 100% |

Table 5. Education Level of Maternal Deaths & Live Births* - Los Angeles County 1994-96

| Education | MD # | % | LB # | % |
|-----------|------|-------|---------|-------|
| > 12 | 18 | 28.6% | 161,647 | 31% |
| 12 | 20 | 31.7% | 140,713 | 26.9% |
| < 12 | 25 | 39.7% | 220,012 | 42.1% |
| Total | 63 | 100% | 522,372 | 100% |

*not including 1857 Live Births for Native Americans, Others, & Unknowns

Table 6. Education Level of Maternal Deaths by Race - Los Angeles County 1994-96

| Education Level | White #/% | Black #/% | Asian/PI #/% | Hispanic #/% | Total #/% |
|-----------------|------------|------------|--------------|--------------|-------------|
| < 12 Years | 0 0% | 3 20% | 0 0% | 22 66.7% | 25 39.7% |
| 12 Years | 4 57.1% | 4 26.7% | 2 25% | 10 30.3% | 20 31.7% |
| > 12 Years | 3 42.9% | 8 53.3% | 6 75% | 1 3% | 18 28.6% |
| Total | 7 100% | 15 100% | 8 100% | 33 100% | 63 100% |

Table 7. Education Level of Live Births by Race - Los Angeles County 1994-96*

| Education Level | White #/% | Black #/% | Asian/PI #/% | Hispanic #/% | Total #/% |
|-----------------|-----------------|-----------------|-----------------|------------------|------------------|
| < 12 | 9,591 9.2% | 9,594 19.7% | 6,266 13% | 194,561 60.5% | 220,012 42.1% |
| 12 | 28,016 27% | 20,583 42.3% | 10,549 21.9% | 81,565 25.4% | 140,713 26.9% |
| > 12 | 66,302 63.8% | 18,437 38% | 31,389 65.1% | 45,519 14.1% | 161,647 31% |
| Total | 103,909 100% | 48,614 100% | 48,204 100% | 321,645 100% | 522,372 100% |

*not including 1857 Live Births for Native Americans, Others, & Unknowns

Table 8. Marital Status of Maternal Deaths & Live Births - Los Angeles County 1994-96

| Marital Status | Maternal Death # | Maternal Death % | Live Birth # | Live Birth % |
|----------------|------------------|------------------|--------------|--------------|
| Single | 38 | 60.3% | 208,634 | 39.8% |
| Married | 25 | 39.7% | 315,595 | 60.2% |
| Total | 63 | 100% | 524,229 | 100% |

Table 9. Marital Status of Maternal Deaths by Race - Los Angeles County 1994-96

| | Married | Unmarried |
|-------------|-----------|-----------|
| White 7 | 4 57% | 3 43% |
| Black 15 | 7 47% | 8 53% |
| Asian/PI 8 | 7 88% | 1 12% |
| Hispanic 33 | 19 58% | 14 42% |
| Other 0 | 0 | 0 |
| Total 63 | 37 59% | 26 41% |

Table 10. Marital Status of Live Births by Race - Los Angeles County 1994-96

| | Married | Unmarried | Total |
|----------|----------------|----------------|---------|
| White | 80,226 77% | 23,683 23% | 103,909 |
| Black | 16,838 35% | 31,776 65% | 48,614 |
| Asian/PI | 42,359 88% | 5,845 12% | 48,204 |
| Hispanic | 175,118 63% | 146,527 37% | 321,645 |
| Other | 1054 57% | 803 43% | 1857 |

Table 11. Occupation of Maternal Deaths - Los Angeles County 1994-96

| Occupation | # | % |
|-------------------------|----|-------|
| Homemaker | 35 | 55.6% |
| Technical & Clerical | 9 | 14.3% |
| Service | 7 | 11.1% |
| Managerial/Professional | 5 | 7.9% |
| Manufacturing & Labor | 5 | 7.9% |
| None | 2 | 3.2% |
| Total | 63 | 100% |

Table 12. Delivery Payment Source of Maternal Deaths by Race - Los Angeles County 1994-96

| Delivery Payment Source | Medi-Cal | Private Insurance | HMO | Uninsured | Unknown | Total |
|-------------------------|-------------|-------------------|-------------|-----------|------------|------------|
| White | 2 28.6% | 2 28.6% | 2 28.6% | 0 0% | 1 14.3% | 7 100% |
| Black | 5 33.3% | 4 26.7% | 3 20.0% | 0 0% | 3 20.0% | 15 100% |
| Asian/PI | 3 37.5% | 2 25.0% | 3 37.5% | 0 0% | 0 0% | 8 100% |
| Hispanic | 26 78.8% | 1 3.0% | 3 9.1% | 3 9.1% | 0 0% | 33 100% |
| Total | 36 57.1% | 9 14.3% | 11 17.5% | 3 6.4% | 4 4.8% | 63 100% |

Table 13. Delivery Payment Source for Live Births by Race - Los Angeles County 1994-96

| Delivery Payment Source | Medi-Cal | Private Insurance | HMO | Uninsured | Unknown | Total |
|-----------------------------------|------------------|-------------------|------------------|----------------|---------------|---------|
| White | 20,904 20.1% | 38,760 37.3% | 39,439 40% | 3571 3.4% | 1,235 1.2% | 103,909 |
| Black | 25,979 53.4% | 4,464 9.2% | 16,844 34.7% | 745 1.5% | 582 1.2% | 48,614 |
| Asian/PI | 13,806 28.7% | 12,646 26.2% | 17,170 35.6% | 3,801 7.9% | 781 1.6% | 48,204 |
| Hispanic | 224,071 69.7% | 25,449 7.9% | 63,221 19.7% | 6,761 2.1% | 2,143 0.6% | 321,645 |
| Native American, Other, & Unknown | 756 40.7% | 387 20.8% | 572 30.8% | 84 4.5% | 58 3.1% | 1857 |
| Total | 285,516 54.4% | 81,706 15.6% | 137,246 26.2% | 14,962 2.9% | 4799 0.9% | 524,229 |

Table 14. Mother's Birthplace of Live Births & Maternal Deaths - Los Angeles County 1994-96

| Mother's Birthplace | LB # | % | MD # | % |
|---------------------|---------|-------|------|-------|
| US | 217,284 | 41.6% | 30 | 47.5% |
| Mexico | 185,064 | 35.5% | 18 | 28.6% |
| China | 5,018 | 1% | 1 | 1.6% |
| Philippines | 11,424 | 2.2% | 3 | 4.8% |
| Other | 102,611 | 19.7% | 11 | 17.5% |
| Totals | 521,357 | 100% | 63 | 100% |

Table 15. Pregnancy Outcomes of Maternal Deaths - Los Angeles County 1994-96

| Pregnancy Outcome | # | % |
|-------------------|----|-------|
| Live Birth | 45 | 71.4% |
| Stillbirth | 7 | 11.1% |
| Undelivered | 5 | 7.9% |
| Ectopic | 3 | 4.8% |
| Abortion | 2 | 3.2% |
| Molar | 1 | 1.6% |
| Total | 63 | 100% |

Table 16. Infant Survival of Maternal Deaths by Gestational Age - Los Angeles County 1994-96

| Weeks Gestational Age | 20-24 | 25-28 | 29-32 | 33-36 | 37-40 | 41+ | Total |
|-----------------------------|-------|-------|-------|-------|-------|-----|-------|
| Survived Hospital Discharge | 0 | 2 | 1 | 11 | 22 | 6 | 42 |
| Died Before Discharge | 2 | 0 | 0 | 1 | 0 | 0 | 3 |
| Stillborn | 1 | 2 | 1 | 1 | 2 | 0 | 7 |
| Total | 3 | 4 | 2 | 13 | 24 | 6 | 52 |

Table 17. Time Interval from Delivery to Maternal Death - Los Angeles County 1994-96

| Interval in Days | # | % |
|------------------|----|-------|
| 0-1 | 30 | 47.6% |
| 2-7 | 16 | 25.3% |
| 8-14 | 7 | 11.1% |
| 15-21 | 4 | 6.4% |
| 22-30 | 2 | 3.2% |
| 31-42 | 2 | 3.2% |
| 43-90 | 0 | 0% |
| 91-365 | 2 | 3.2% |
| Total | 63 | 100% |

Table 18. Maternal Mortality Ratio (MMR) by Race - Los Angeles County 1994-96

| Race | White | Black | Asian/PI | Hispanic | Other | Total |
|-----------------|-------------|--------------|--------------|--------------|----------|--------------|
| Maternal Deaths | 7 | 15 | 8 | 33 | 0 | 63 |
| Live Births | 103,905 | 48,614 | 48,204 | 321,654 | 1,857 | 524,229 |
| MMR | 6.73 | 30.85 | 16.59 | 10.25 | 0 | 12.02 |

Table 19. Maternal Mortality Ratio (MMR) by Age Groups - Los Angeles County 1994-96

| Age Group | < 20 | 20-24 | 25-29 | 30-34 | 35-39 | 40+ | Total |
|-----------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Live Births | 65,344 | 129,870 | 143,006 | 116,183 | 56,735 | 13,091 | 524,229 |
| Maternal Deaths | 5 | 10 | 11 | 19 | 11 | 7 | 63 |
| MMR | 7.65 | 7.70 | 7.69 | 16.35 | 19.39 | 53.47 | 12.02 |

Table 20. Maternal Mortality Ratios (MMR) by Age Groups Los Angeles County 1994-96 and US 1987-90

| Age Group | < 20 | 20-24 | 25-29 | 30-34 | 35-39 | 40+ | Total |
|--------------------------|-------------|-------------|-------------|--------------|--------------|-------------|--------------|
| US 1987-90 MMR | n157 7.8 | n306 7.1 | n351 7.0 | n367 11.1 | n206 18.2 | n72 41.6 | n1459 9.2 |
| LA County 1994-96 MMR | n5 7.65 | n10 7.70 | n11 7.69 | n19 16.35 | n11 19.39 | n7 53.47 | n63 12.02 |

Table 21. Maternal Mortality Ratios by Live-Birth Order US 1987-90 vs LAC 1994-96

| Age Group Live-birth Order | < 20 | 20-29 | 30+ | All Ages |
|-------------------------------|------------|------------|--------------|--------------|
| First live birth US LAC | 3.7 5.9 | 4.2 5.7 | 6.6 16.0 | 4.5 8.0 |
| Second live birth US LAC | 3.9 8.1 | 2.8 6.4 | 6.7 10.8 | 4.1 8.0 |
| Third live birth US LAC | 4.2 0 | 3.9 6.4 | 7.5 19.8 | 5.3 12.3 |
| Fourth live birth US LAC | 44.0 0 | 6.0 5.8 | 10.1 13.2 | 8.5 9.9 |
| Fifth or more US LAC | 0 0 | 9.1 0 | 13.7 21.9 | 12.1 14.2 |

Table 22. First Trimester Prenatal Care Onset - Los Angeles County 1994-96

| | All Live Births n= 522,731 | Maternal Deaths @ > GA13 n= 58 | Year 2000 Objective |
|-----------------------|-------------------------------|-----------------------------------|------------------------|
| 1st Trimester Care | 409,560 | 28 | ----- |
| % | 78.35% | 48.3% | 90% |

Table 23. Adequacy of Care by Kessner Index - Los Angeles County 1994-96

| Adequate | Intermediate | Inadequate | Unknown |
|----------|--------------|------------|---------|
| 22 | 17 | 12 | 7 |
| 37.9% | 29.3% | 20.7% | 12.1% |

Table 24. Prenatal Care & Substance Use in Maternal Deaths - Los Angeles County 1994-96

| | Prenatal Care | No Prenatal Care | Total |
|---------------|---------------|------------------|-------|
| No Use | 43 | 2 | 45 |
| Substance Use | 2 | 5 | 7 |
| Total | 45 | 7 | 52 |

Table 25. Primary Cause of Maternal Death - Los Angeles County 1994-96

| Cause of Death | # | % |
|----------------|----|-------|
| Hemorrhage | 18 | 28.6% |
| Embolism | 12 | 19% |
| Hypertension | 11 | 17.5% |
| Infection | 8 | 12.7% |
| Cardiomyopathy | 3 | 4.8% |
| Anesthesia | 1 | 1.6% |
| Pulmonary | 3 | 4.8% |
| Other | 6 | 9.5% |
| Undetermined | 1 | 1.6% |
| Total | 63 | 100% |

Table 26. Hemorrhagic Causes of Maternal Death - Los Angeles County 1994-96

| Hemorrhage Causes of Death | # | % |
|----------------------------|----|-------|
| Uterine Laceration\Rupture | 5 | 27.8% |
| Placenta Accreta | 4 | 22.2% |
| Abruptio Placenta | 3 | 16.7% |
| Ectopic Rupture | 3 | 16.7% |
| Uterine Atony | 2 | 11.1% |
| DIC due to Sepsis | 1 | 5.6% |
| Total | 18 | 100% |

Table 27. Associated Conditions Leading to Maternal Death - Los Angeles County 1994-96

| | |
|----------------------------|----|
| Respiratory Disorders | 24 |
| Cardiovascular Disorders | 17 |
| Hematologic/Autoimmune | 11 |
| Labor & Delivery Problems | 10 |
| Placental Problems | 9 |
| Uterine Problems | 8 |
| Fetal Problems | 6 |
| Sepsis\Inflammation | 5 |
| Hypertension | 4 |
| Genitourinary Disorders | 3 |
| Obstetric Problems | 3 |
| Neuro\Psych Disorders | 2 |
| Endocrine\Metabolic | 2 |
| Musculoskeletal Disorders | 1 |
| Gastrointestinal Disorders | 1 |

Table 28. Chance to Alter the Outcome of Maternal Deaths - Los Angeles County 1994-96

| Chance to Alter Outcome | # | % |
|-------------------------|----|-------|
| No Chance | 15 | 23.8% |
| Some Chance | 24 | 38.1% |
| Good Chance | 18 | 28.6% |
| Strong Chance | 6 | 9.5% |
| Total | 63 | 100% |

Table 29. Maternal Death Contributing Factors - Los Angeles County 1994-96

| Contributing Factors | # |
|----------------------|----|
| Community | 2 |
| Patient | 25 |
| Facility | 14 |
| Provider | 45 |

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